

ABSTRACT OF THE DISCLOSURE

An optical amplifier includes first and second optical amplifier units, a variable optical attenuator optically coupled between the first and second optical amplifier units, a first control unit to control gains of the first and second optical amplifier units based on an input of the first optical amplifier unit and an output of the second optical amplifier unit, and a second control unit to control an attenuation quantity of the variable optical attenuator based on the input and an output of the first optical amplifier unit and an input and the output of the second optical amplifier unit.

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